Constructors Solutions

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Default initialization

- The following class does not define any constructors
- Why is this problematic?
  - The compiler will synthesize a default constructor
  - This will default initialize the data members
  - For built-in types, the initial values will be undefined
- Write a simple program to demonstrate the problem

```
class refrigerator {
  // Data members
  int temperature;
  bool door_open;
  bool power_on;
};
```

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In-class initialization

- Use a Modern C++ feature to rewrite your program and avoid the problem

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Delegating constructors

- What is meant by a "delegating" constructor?
  - A delegating constructor calls another constructor to perform the initialization
  - It forwards its arguments to the constructor
- Why is this useful?
  - In a complex class, there may be many constructors which perform similar tasks but take different arguments
  - We can write a constructor which takes all arguments and initializes them
  - The other constructors then forward their arguments to this constructor
  - This avoids having duplicate code in the constructors

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